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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Scott Kaminski

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06/09/2006

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EXAMINER

LEUNG, CHRISTINA Y

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/040,893	<b>Applicant(s)</b> KAMINSKI ET AL.	
	<b>Examiner</b> Christina Y. Leung	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.  
 4a) Of the above claim(s) 10-18 and 20-27 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-8 and 28-31 is/are rejected.  
 7) ☒ Claim(s) 9, 19 and 32 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 21 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>21 March 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 21 March 2006 has been considered by the examiner.

### ***Drawings***

2. The drawings were received on 21 December 2005. These drawings are acceptable.

### ***Claim Objections***

3. Claims 9, 19, and 32 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

In this case, claim 9 depends on “either of claims 6-8,” but claims 6-8 each depend directly or indirectly on claim 5, which already depends on “either of claims 1 or 3.” Claim 19 further depends on claim 9 and is therefore also improper for the same reason.

Claim 32 depends on “either of claims 29-31,” but claims 29-31 each depend directly or indirectly on claim 28, which already depends on “either of claims 2 or 4.”

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 8 and 31 each recite “the input of the 1 x y switch or splitter” in lines 1 and 2 of the claims. There is insufficient antecedent basis for this limitation in the claims because claims 6 and 29 on which they respectively depend do not recite a 1 x y switch or splitter. Examiner respectfully notes that claim 8 may depend on claim 7 instead, and claim 31 may depend on claim 30 instead.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 5, 6, 28, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by MacDonald (US 6,567,576 B2).

Regarding claim 1, MacDonald discloses an  $n \times m$  switch module 122 for use in the first stage (shown as stage 104 in Figure 3; stage 14 in Figure 2) of an  $N \times N$  multi-stage optical switching architecture (Figures 2 and 3), comprising:

sufficient input and output ports to satisfy the Clos nonblocking criteria (column 1, lines 25-49; column 4, lines 4-21);

at least one extra input port (port 140 of module 122 as shown in Figure 3; column 4, lines 20-42);

at least one extra output port (an extra output port is not explicitly labeled in the figures, but MacDonald clearly discloses that the switch module 122 is part of an “overconnected Clos

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switch matrix” such as shown in Figure 2, wherein the switch modules of the first stage each have at least one extra output port connected to the inputs of at least one extra center stage module; column 1, lines 40-67; column 2, lines 1-14; column 4, lines 4-54);

where at least one of the extra output ports are used for fault isolation (specifically, MacDonald discloses that at least one of the extra output ports of the first stage is used to connect to an extra center stage module for fault isolation purposes; column 1, lines 40-67; column 2, lines 1-14; column 4, lines 4-54).

Regarding claim 2 in particular, Examiner notes that MacDonald does not have a separate figure for the first and final stages of the switching architecture, but Figure 3 describes both the first and final switch architecture stages disclosed by MacDonald (both stages are called “external” stages by MacDonald, in contrast with the “central” stage). MacDonald also explicitly discloses that the final stage of the  $N \times N$  multi-stage optical switching architecture is “symmetrical to the first external stage 104” (column 5, lines 16-17). Therefore, regarding claim 2, as similarly discussed with regard to claim 1, MacDonald discloses an  $n \times m$  switch module 122 for use in the final stage (shown as stage 104 in Figure 3, except considered in an opposite direction to the first stage; stage 16 in Figure 3) of an  $N \times N$  multi-stage optical switching architecture, comprising:

sufficient input and output ports to satisfy the Clos nonblocking criteria (column 1, lines 25-49; column 4, lines 4-21);

at least one extra input port (again, MacDonald clearly discloses that the switch module 122 is part of an “overconnected Clos switch matrix” such as shown in Figure 2, wherein the switch modules of the final stage each have at least one extra input port connected to the outputs

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of at least one extra center stage module; column 1, lines 40-67; column 2, lines 1-14; column 4, lines 4-54);

at least one extra output port (port 140 of module 122 as shown in Figure 3; column 4, lines 20-42);

where at least one of the extra output ports are used for fault isolation (specifically, MacDonald discloses that least one of the extra output ports of the final stage, i.e., port 140, is used for fault isolation; column 4, lines 20-65).

Regarding claim 5, MacDonald discloses a multi-stage optical switching architecture (Figures 2 and 3), comprising an input stage, at least one middle stage, and an output stage where the first stage comprises a plurality of the switch modules of claim 1 (column 4, lines 4-65; column 5, lines 10-16).

Regarding claim 28, MacDonald discloses a mutli-stage optical switching architecture comprising: an input stage, at least one middle stage, and an output stage, where the first stage comprises a plurality of the switch modules of claim 1, and the second stage comprises a plurality of the switch modules of claim 2 (column 4, lines 4-65; column 5, lines 10-16).

Regarding claims 5 and 28, again, although Figure 3 only shows one “external” stage 104 which is either a first or final stage as discussed above with regard to claims 1 and 9, MacDonald clearly discloses that the other external stage is symmetrical to the stage 104 that is explicitly shown in Figure 3 (column 5, lines 10-16)

Regarding claims 6 and 29, MacDonald discloses that the middle stage comprises  $2n-1$  m x m switch modules which are allocated and one m x m switch which is unallocated (column 1, lines 41-49; column 4, lines 4-21).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald in view of Bala et al.

Regarding claims 3 and 4, MacDonald discloses  $n \times m$  switch modules as discussed above with regard to claims 1 and 2 respectively include spare ports. MacDonald further discloses that further additional spare ports (i.e., more than only one extra input port and only one extra output port) may be added (column 4, lines 26-28), but MacDonald does not specifically disclose that further additional spare ports are added such that  $n = m$ .

However, regarding claims 3 and 4, Bala et al. teach a system that is related to the one disclosed by MacDonald, including switch modules 111 and 131 for use in first or final stages of a multi-stage optical switching architecture (Figure 1C, for example). Bala et al. further teach that a plurality of extra input and output ports may be added to the switch modules, wherein the extra ports may be used as testing or service channels (column 6, lines 5-8). Bala et al. teach that an arbitrary number of extra ports may be included for these purposes, but they also specifically suggest that spare ports may be added to an  $n \times m$  switch module such that  $n = m$  (column 6, lines 3-4).

It would have been obvious to a person of ordinary skill in the art to provide further extra ports such that  $n = m$  as taught by Bala et al. in the  $n \times m$  switch modules disclosed

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by MacDonald in order to provide a number of spare ports to be used as testing or service channels as suggested by Bala et al. Examiner also respectfully notes that the claims only recite that “at least one of the extra output ports are used for fault isolation” in particular but do not specifically recite further details regarding the function of other spare ports.

10. Claims 7, 8, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald in view of .

Regarding claims 7, 8, 30, and 31 (as well as claims 8 and 31 may be understood with respect to 35 U.S.C. 112 discussed above), MacDonald discloses a multi-stage optical switching architecture as discussed above with regard to claims 5 and 6, and 28 and 29, including first stage switch modules each having extra ports. MacDonald does not specifically disclose a 1 x y switch or splitter with outputs each connected to a spare port in each of the first stage switch modules.

However, regarding claims 7, 8, 30, and 31, Mestdagh et al. teach a system that is related to the one disclosed by MacDonald, including a system for optical communication (Figure 5). Mestdagh et al. further teach a 1 x y switch or splitter (element “SP” shown in Figure 5; Mestdagh et al. teach that SP can be a splitter or a switch in column 6 , lines 6-9) with outputs connected to spare ports in switch modules for output to further links in a communications network (column 5, lines 46-68; column 6, lines 1-13). Regarding claims 8 and 31 in particular, Mestdagh et al. further teach that the input of the 1 x y switch or splitter SP is connected to an external light source (i.e., spare transmit line circuit STC; column 3, lines 14-17; column 5, lines 51-54).



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Regarding claims 7, 8, 30, and 31, it would have been obvious to a person of ordinary skill in the art to further include a 1 x y switch or splitter and an external light source as suggested by Mestdagh et al. in the system disclosed by MacDonald in order to provide a backup transmitter that can be connected to the optical network in case a transmission unit for providing input signals to the switch architecture becomes disabled (Mestdagh et al., column 4, lines 47-66).

### ***Response to Arguments***

11. Applicants' arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

12. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023.

The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
CHRISTINA LEUNG  
PRIMARY EXAMINER